Listing and Amendments to the Claims

This listing of claims will replace the claims that were published in the PCT Application:

1. (currently amended) A linearly expandable router ~~(100)~~, comprising:

a first routing engine ~~(128)~~ having input and output sides;

a second routing engine ~~(128)~~ having input and output sides;

a third routing engine ~~(128)~~ having input and output sides;

a first link ~~(110)~~, said first link ~~(110)~~ coupling said input side of said first routing engine ~~(128)~~ to said input side of said second routing engine ~~(128)~~;

a second link ~~(112)~~, said second link ~~(112)~~ coupling said input side of said first routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~; and

a third link ~~(116)~~, said third link ~~(116)~~ coupling said input side of said second routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~;

wherein said first, second and third routing engines ~~(128)~~ are arranged in a fully connected topology.

2. (currently amended) The apparatus of claim 1, wherein:

said first, second and third routing engines ~~(128)~~ each have N inputs to said input side thereof and M outputs from said output side thereof; and

said linearly expandable router ~~(100)~~ formed from said first, second and third routing engines ~~(128)~~ having 3N inputs and 3M outputs.

3. (currently amended) The apparatus of claim 2, wherein:

said first link ~~(110)~~ providing said N inputs to said first routing engine ~~(128)~~ to said input side of said second routing engine ~~(128)~~ as a first N additional inputs thereto and providing said N inputs to said second routing engine ~~(128)~~ to said input side of said first routing engine ~~(128)~~ as a first N additional inputs thereto;

said second link ~~(112)~~ providing said N inputs to said first routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~ as a first N additional inputs thereto and providing said N inputs to said third routing engine ~~(128)~~ to said input side of said first routing engine ~~(128)~~ as a second N additional inputs thereto; and

said third link ~~(116)~~ providing said N inputs to said second routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~ as a second N additional inputs thereto and providing said N inputs to said third routing engine ~~(128)~~ to said input side of said second routing engine ~~(128)~~ as a second N additional inputs thereto.

4. (currently amended) The apparatus of claim 1, and further comprising:

a fourth routing engine ~~(128)~~ having input and output sides;

a fourth link ~~(114)~~, said fourth link ~~(114)~~ coupling said input side of said first routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~;

a fifth link ~~(118)~~, said fifth link ~~(118)~~ coupling said input side of said second routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~; and

a sixth link ~~(120)~~, said sixth link ~~(120)~~ coupling said input side of said third routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~;

wherein said first, second, third and fourth routing engines ~~(128)~~ are arranged in a fully connected topology.

5. (currently amended) The apparatus of claim 4, wherein:

said first, second, third and fourth routing engines ~~(128)~~ have N inputs to said input side and m outputs from said output side; and

said linearly expandable router ~~(100)~~ formed from said first, second, third and fourth routing engines ~~(128)~~ having 4N inputs and 4M outputs.

6. (currently amended) The apparatus of claim 5, wherein:

said first link ~~(110)~~ providing said N inputs to said first routing engine ~~(128)~~ to said input side of said second routing engine ~~(128)~~ as a first N additional inputs thereto and providing said N inputs to said second routing engine ~~(128)~~ to said input side of said first routing engine ~~(128)~~ as a first N additional inputs thereto;

said second link ~~(112)~~ providing said N inputs to said first routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~ as a first N additional inputs thereto and providing said N inputs to said third routing engine ~~(128)~~ to said input side of said first routing engine ~~(128)~~ as a second N additional inputs thereto;

said third link ~~(114)~~ providing said N inputs to said first routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~ as a first N additional inputs thereto and providing said N inputs to said fourth routing engine ~~(128)~~ to said input side of said first routing engine ~~(128)~~ as a third N additional inputs thereto;

said fourth link ~~(116)~~ proving said N inputs to said second routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~ as a second N additional inputs thereto and providing said N inputs to said third routing engine ~~(128)~~ to said input side of said second routing engine ~~(128)~~ as a second N additional inputs thereto;

said fifth link ~~(118)~~ proving said N inputs to said second routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~ as a second N additional inputs thereto and providing said N inputs to said fourth routing engine ~~(128)~~ to said input side of said second routing engine ~~(128)~~ as a third N additional inputs thereto;

said sixth link ~~(120)~~ proving said N inputs to said third routing engine ~~(128)~~ to said input side of said fourth routing engine ~~(128)~~ as a third N additional inputs thereto and providing said N inputs to said fourth routing engine ~~(128)~~ to said input side of said third routing engine ~~(128)~~ as a third N additional inputs thereto.

7. (currently amended) A linearly expandable broadcast router ~~(100)~~, comprising:

at least three broadcast router components ~~(102, 104, 106)~~, each of said at least three broadcast router components ~~(102, 104, 106)~~having an input side and an output side; and

means ~~(110, 112, 116)~~ for coupling said at least three linear expandable broadcast router components ~~(102, 104, 106)~~in a fully interconnected topology.

8. (currently amended) The apparatus of claim 7, wherein said input side of each of said at least three broadcast router components ~~(102, 104, 106)~~has N inputs and said output side of each of said at least three broadcast router components ~~(102, 104, 106)~~has M outputs.

9. (currently amended) The apparatus of claim 8, wherein:

each one of said at least three broadcast router components ~~(102, 104, 106)~~ further comprises a routing engine ~~(128)~~ coupled between said input and output sides thereof; and

said coupling means ~~(110, 112, 116)~~ further comprises means for coupling ~~(130, 132 130)~~ said N inputs for each one of said at least three broadcast router components ~~(102, 104, 106)~~to said routing engine ~~(128)~~ for the other ones of said at least three broadcast router components.

10. (currently amended) A method of constructing a linearly expandable broadcast router ~~(100)~~, comprising:

providing first, second and third routers ~~(102, 104, 106)~~, each having input and output sides;

coupling, using a first discrete path ~~(110)~~, said input side of said first router ~~(102)~~ to said input side of said second router ~~(104)~~;

coupling, using a second discrete path ~~(112)~~, said input side of said first router ~~(102)~~ to said input side of said third router ~~(106)~~; and

coupling, using a third discrete path ~~(116)~~, said input side of said second router ~~(104)~~ to said input side of said third router ~~(106)~~.

11. (currently amended) The method of claim 10, and further comprising:

providing a fourth router ~~(108)~~ having input and output sides;

coupling, using a fourth discrete path ~~(114)~~, said input side of said first router ~~(102)~~ to said input side of said fourth router ~~(108)~~;

coupling, using a fifth discrete path ~~(118)~~, said input side of said second router ~~(104)~~ to said input side of said fourth router ~~(108)~~; and

coupling, using a sixth discrete path ~~(120)~~, said input side of said third router ~~(106)~~ to said input side of said fourth router ~~(108)~~.